

EXHIBIT B



The University of Oklahoma

CENTER FOR THE STUDY OF WIRELESS ELECTROMAGNETIC COMPATIBILITY
SCHOOL OF INDUSTRIAL ENGINEERING

January 24, 1996
Norman, Oklahoma

Progress Report

Hearing Aid - Wireless Phone Interaction Study

Researchers from the Center for the Study of Wireless Electromagnetic Compatibility at the University of Oklahoma today gave a progress report on testing currently underway to determine potential solutions to mitigate interactions where they exist between wireless phones and hearing aids.

The report was discussed with representatives of hearing-aid groups, wireless service providers and manufacturers, hearing-aid manufacturers and the Federal Communications Commission.

"This study is the first major, comprehensive scientific effort in the United States that involves a large group of people with hearing aids," said Hank Grant, Chairman of the Board of Directors of the Oklahoma Center. "The key objective is to evaluate short-term and long-term solutions that will enable people with hearing aids to use the new digital wireless phones."

When completed, the study will have evaluated most North American digital phone technologies. To date, studies are underway with 1900 MHz PCS (J007), 800 MHz TDMA (IS-54), and 800 MHz CDMA (IS-95).

Phase I of the Hearing Aid Project is to conduct testing with hearing aid users in order to (i) determine the existence and severity of the interference as a function of hearing aid type, wireless phone technology and hearing loss configuration, and (ii) evaluate the effectiveness of proposed solutions. The study is being conducted in cooperation with the Hough Ear Institute in Oklahoma City. Phase II of the Hearing Aid Project will involve instrument-based testing with an emphasis on identifying the mechanism of the interaction and leading to the development and evaluation of longer term solutions.

The clinical trials with hearing aid users (Phase I) began in late December 1995. "Because only 18 of the 75 people involved with the study have been tested, conclusions are premature at this time," said Ravi Ravindran, Project Director of the Oklahoma Center.

However, the research has yielded these observations:

- The first three digital phone technologies examined have some degree of interference with the hearing aids that have been tested.
- Testing to date has not yet characterized the extent of interference for different phone technologies and types of hearing aids because of the limited sample size.
- Shielding of phones and hearing aids helped reduce interference. The feasibility of shielding and other interference mitigating techniques will be pursued.
- Among the different types of hearing aids, Behind-The-Ear (BTE) units have demonstrated the most significant interaction. This is consistent with the results from other similar studies.

The Oklahoma Center plans to complete Phase I Testing of all 75 people involved in the study by the end of March 1996 and publish its report in April 1996. The instrument-based laboratory testing (Phase II) will begin in March 1996 and is expected to be completed during the fourth quarter 1996.

The Center for the Study of Wireless Electromagnetic Compatibility was established in Fall 1994 with funding from wireless service providers and manufacturers, the Cellular Telecommunications Industry Association, the University of Oklahoma, and the National Science Foundation. Located at the University of Oklahoma, School of Industrial Engineering on the Norman Campus, the Center is chartered to work with industries, government and business to resolve inter-industry electromagnetic compatibility issues. The academic independence of the Center assures that industry and business will have equal access to its services and that government agencies will have an independent resource for information and expertise.

EXHIBIT C



Building The
Wireless Future

CTIA

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November 7, 1995

Dear :

In conjunction with our Health & Safety efforts, CTIA is currently compiling a list of cellular products that are Hearing Aid-Compatible (HAC) as defined in the FCC Rules and Regulation Part 68. We request your support of our efforts by supplying a list of products that your company currently manufactures that comply with this specification.

HAC telephones are defined in the Commission's rules at Section 68.4(3) as follows:

A telephone is hearing aid-compatible if it provides internal means for effective use with hearing aids that are designed to be compatible with telephones which meet established technical standards for hearing aid compatibility.

The devices in today's hearing aids are called telecoils, or T-coils. The T-coil enables the user to pick-up and amplify magnetic fields. HAC as defined by the Commission's rules currently refers to technology that generate magnetic fields, not an acoustic field. Telephones which comply with HAC have an internal wire coil which generates the needed magnetic field. Older types of telephones contained magnetic devices as part of their internal handset receiver. As technology advanced an alternate method of transduction was introduced; that being the use of electrostatic receivers. These type of receivers allow for smaller and lighter handsets but eliminate the magnetic field. In order to comply with HAC requirements receivers must include alternate methods of generating the magnetic field. Cellular products which do not use the electrostatic receiver may generate the magnetic field but still may not meet the HAC minimum requirements.

The HAC minimum requirements as stated in Section 68.316 is as follows:

A telephone handset is hearing aid-compatible if it complies with the following standard, published by Electronic Industries Association, copyright 1983, and reproduced by permission of Electronic Industries Association:

**ELECTRONIC INDUSTRIES ASSOCIATION RECOMMENDED STANDARD
RS-504 MAGNETIC FIELD INTENSITY CRITERIA FOR TELEPHONE
COMPATIBILITY WITH HEARING AIDS.**

The RS-504 standard specifies the technical requirements in three parameters: intensity, direction, and frequency response. For Axial Field Intensity the measured magnetic field shall be greater than -22 dB relative to 1 A/m, for an input of -10 dBV at 1000 Hz. For Radial Field Intensity, the radial components of the magnetic field as measured at four points 90 degrees apart shall be greater than -27 dB relative to 1 A/m for an input of -10 dBV at 1000 Hz. The Induced Voltage Frequency Response shall fall within the acceptable region of RS-504, Fig. 4A or Fig. 4B over the frequency range 300-to-3000 Hz.

In addition, we would also like a list of those products that can provide an earphone jack (hands-free) connection.

Due to the momentum of the HAC issues relative to the cellular industry, we must ask for a timely response. Please submit your list of products, and/or comments, to Mr. John Breau, Director for Health & Safety Policy, no later than November 17, 1995. CTIA wishes to thank you in advance for your support on this issue.

Regards:

A handwritten signature in black ink, appearing to read 'Arthur L. Prest', written in a cursive style.

Arthur L. Prest
Vice President, Science and Technology

Hearing Aid Compatibility List of Wireless Products

Manufacturer	Model Number	Type	FCC Part 68 Hearing-Aid Compatible	Alternative Coupling (Ext. Audio Jack)
AT&T	3815	Handheld	NO	YES
AT&T	6650	Handheld	NO	YES
AudioVox	All Models	Transport	w/modifications	NO
AudioVox	MXV-425	Handheld	NO	YES
AudioVox	MXV-450	Handheld	NO	YES
Ericsson	GE CT-700 Series	Handheld	YES	YES
Ericsson	GE CT-800 Series	Handheld	YES	YES
Ericsson	GE DT-3000 Series	Handheld	NO	YES
Ericsson	GE CT-500 Series	Handheld	YES	YES
Ericsson	AH-200 Series	Handheld	YES	YES
Ericsson	AH-300 Series	Handheld	YES	YES
Ericsson	DH-300 Series	Handheld	NO	YES
Ericsson	CH-337	Handheld	NO	YES
Fujitsu	PCX	Handheld	YES	YES
Fujitsu	Personal Commander ST	Handheld	YES	YES
Fujitsu	Personal Commander FX	Handheld	YES	YES
Fujitsu	Personal Commander XL	Handheld	YES	YES
Fujitsu	Personna, Personna Classic	Handheld	YES	YES
Fujitsu	Personna 300	Handheld	YES	YES
Hughes	M6200	Mobile	NO	NO
Hughes	P8100	Handheld	NO	NO

Hearing Aid Compatibility List of Wireless Products

Manufacturer	Model Number	Type	FCC Part 68 Hearing-Aid Compatible	Alternative Coupling (Ext. Audio Jack)
JRC	ICT-8800	Transport	YES	NO
JRC	ICT-8820	Transport	YES	NO
JRC	ICT8830	Transport	YES	NO
Mitsubishi	MT-129	Handheld	NO	YES
Motorola	Micro TAC Lite XL	Handheld	NO	YES
Motorola	Micro TAC Elite	Handheld	NO	YES
Motorola	Micro TAC Lite II	Handheld	NO	YES
NEC America	No Data		NO	No Data
Nippondenso	800PAI	Handheld	NO	YES
Nokia	101	Handheld	NO	YES
Nokia	121	Handheld	NO	YES
Nokia	PT128	Handheld	NO	YES
Nokia	191	Handheld	NO	YES
Nokia	201	Handheld	NO	YES
Nokia	616	Handheld	NO	YES
Nokia	636	Handheld	NO	YES
Nokia	638	Handheld	NO	YES
Nokia	1000	Handheld	NO	YES
Nokia	2120	Handheld	NO	YES
Nokia	2190	Handheld	NO	YES
NovAtel	ICT-8800	Transport	YES	NO

Hearing Aid Compatibility List of Wireless Products

Manufacturer	Model Number	Type	FCC Part 68 Hearing-Aid Compatible	Alternative Coupling (Ext. Audio Jack)
OKI Telecom	1300 Series	Handheld	NO	YES
Panasonic	EB-H10	Handheld	NO	YES
Panasonic	EB-H10C	Handheld	NO	YES
Panasonic	EB-H10E	Handheld	NO	YES
Panasonic	EB-H10K	Handheld	NO	YES
Panasonic	EB-H10V	Handheld	NO	YES
Panasonic	EB-H10W	Handheld	NO	YES
Panasonic	EB-T10	Transport	YES	NO
Panasonic	EB-H15	Handheld	NO	YES
Panasonic	EB-H20	Handheld	NO	YES
Panasonic	EB-H20C	Handheld	NO	YES
Panasonic	EB-H20E	Handheld	NO	YES
Panasonic	EB-H20K	Handheld	NO	YES
Panasonic	EB-H20V	Handheld	NO	YES
Panasonic	EB-H20W	Handheld	NO	YES
Panasonic	EB-H40	Handheld	NO	YES
Panasonic	EB-H41	Handheld	NO	YES
Panasonic	EB-H70	Handheld	YES	YES
Panasonic	EB-H70C	Handheld	YES	YES
Panasonic	EB-H103	Handheld	NO	YES
Panasonic	EB-H105	Handheld	NO	YES

Hearing Aid Compatibility List of Wireless Products

Manufacturer	Model Number	Type	FCC Part 68 Hearing-Aid Compatible	Alternative Coupling (Ext. Audio Jack)
Panasonic	EB-H105S	Handheld	NO	YES
Panasonic	EB-HH120	Handheld	NO	YES
Panasonic	EB-HH120BSC	Handheld	NO	YES
Panasonic	EB-HH120SBC	Handheld	NO	YES
Panasonic	EB-HH120SPR	Handheld	NO	YES
Panasonic	EB-H151	Handheld	NO	YES
Panasonic	EB-H152	Handheld	NO	YES
Panasonic	EB-H153	Handheld	NO	YES
Panasonic	EB-H205	Handheld	NO	YES
Panasonic	EB-H205S	Handheld	NO	YES
Panasonic	EB-H205X	Handheld	NO	YES
Panasonic	EB-500	Transport	YES	NO
Panasonic	EB-H705	Handheld	YES	YES
Panasonic	EB-H1071	Handheld	NO	YES
Panasonic	EB-1075	Handheld	NO	YES
Panasonic	EB-H2071	Handheld	NO	YES
Panasonic	EB-H2075	Handheld	NO	YES
Panasonic	EB-7071	Handheld	YES	YES
Panasonic	EB-H7075	Handheld	YES	YES
Sharp	No Data		No Data	No Data
Shinom	No Data		No Data	No Data

Hearing Aid Compatibility List of Wireless Products

Manufacturer	Model Number	Type	FCC Part 68 Hearing-Aid Compatible	Alternative Coupling (Ext. Audio Jack)
Sony	No Data		No Data	No Data
Uniden	No Data		No Data	No Data